

IN THE CLAIMS:

Please amend claim 1 as shown below:

Claim 1 (currently amended): An optical communication device for reflecting detection light to a central station in order to find disorders in a light guide, comprising:

a substrate;

at least one light guide provided on the substrate for guiding signal light;

at least one optoelectronic device chip mounted upon the substrate for producing transmitting signal light for the central station or for receiving signals from the central station;

and

a detection light reflecting grating ~~disposable~~ on the light guide ~~which leads to lead~~ the signal light, ~~and reflects to reflect~~ detection light which is emitted from the central station and which has of a wavelength λ_3 different from the signal light, and to bring the detection light back via the same light guide to such that the central station so that the central station detects the occurrence of ~~detects~~ disorders in the light guide between the central station and ~~an~~ the optical communication device ~~based upon whether detection light reflected by receiving or not receiving the detection light reflecting grating is received by the central station.~~

Claim 2 (original): The optical communication device according to Claim 1, wherein the light guide is a silica (SiO₂) optical fiber mounted upon the substrate and the detection light reflecting grating is formed upon the optical fiber.

Claim 3 (original): The optical communication device according to Claim 1, wherein the substrate is a silicon substrate or a SiO₂-glass substrate, the light guide is a SiO₂ type light waveguide produced upon the silicon substrate or the SiO₂-glass substrate and the detection light reflecting grating is formed upon the SiO₂ type light waveguide.

Claim 4 (original): The optical communication device according to Claim 1, wherein the substrate is a plastic substrate made of a polymer, the light guide is a plastic light waveguide produced upon the plastic substrate and the detection light reflecting grating is formed upon the plastic light waveguide.

Claim 5 (previously presented): The optical communication device according to Claim 1, wherein a plurality of independent optical fibers having the detection light reflecting gratings is provided on the substrate and an optoelectronic device is allocated at an end of each of the optical fibers for exchanging a plurality of signals via a plurality of fibers.

Claim 6 (original): The optical communication device according to Claim 1, wherein a plurality of independent light waveguides with the detection light reflecting gratings are provided on the substrate and an optoelectronic device is allocated at an end of each of the light waveguides for exchanging a plurality of signals via a plurality of fibers.

Claim 7 (original): The optical communication device according to Claim 5, wherein all the optoelectronic devices are PDs (photodiodes) for receiving a plurality of independent signals simultaneously.

Claim 8 (original): The optical communication device according to Claim 5, wherein all the optoelectronic devices are LDs (laser diodes) for transmitting a plurality of independent signals simultaneously.

Claim 9 (original): The optical communication device according to Claim 5, wherein m optoelectronic devices are LDs (laser diodes) for transmitting a plurality of independent signals

simultaneously and k optoelectronic devices are PDs (photodiodes) for receiving a plurality of independent signals simultaneously.

Claim 10 (original): The optical communication device according to Claim 6, wherein all the optoelectronic devices are PDs (photodiodes) for receiving a plurality of independent signals simultaneously.

Claim 11 (original): The optical communication device according to Claim 6, wherein all the optoelectronic devices are LDs (laser diodes) for transmitting a plurality of independent signals simultaneously.

Claim 12 (original): The optical communication device according to Claim 6, wherein m optoelectronic devices are LDs (laser diodes) for transmitting a plurality of independent signals simultaneously and k optoelectronic devices are PDs (photodiodes) for receiving a plurality of independent signals simultaneously.

Claim 13 (original): The optical communication device according to Claim 3, wherein the light waveguide is Y-branched waveguides having a first light waveguide, a second light waveguide and a coupling part selectively connecting the first and the second waveguides, an LD is mounted at an end of the first waveguide on the substrate for launching transmitting light into the end of the first light waveguide, a PD is mounted at an end of the second waveguide on the substrate for sensing receiving light emitted from the end of the second waveguide and producing a photocurrent from the receiving light.

Claim 14 (original): The optical communication device according to Claim 13, wherein an amplifier is mounted on the substrate for amplifying the photocurrent of the PD.

Claim 15 (original): The optical communication device according to Claim 4, wherein the light waveguide is Y-branched waveguides having a first light waveguide, a second light waveguide and a coupling part selectively connecting the first and the second waveguides, an LD is mounted at an end of the first waveguide on the substrate for launching transmitting light into the end of the first light waveguide, a PD is mounted at an end of the second waveguide on the substrate for sensing receiving light emitted from the end of the second waveguide and producing a photocurrent from the receiving light.

Claim 16 (original): The optical communication device according to Claim 15, wherein an amplifier is mounted on the substrate for amplifying the photocurrent of the PD.

Claim 17 (original): The optical communication device according to Claim 2, wherein the substrate is a complex substrate being composed of a smaller first substrate of silicon single crystal and a larger second substrate being made of plastic and having a cavity and the substrates are coupled by putting the first substrate in the cavity of the second substrate.

Claim 18 (original): The optical communication device according to Claim 17, wherein the optoelectronic device is mounted upon the smaller first substrate and the fiber is supported by both the first and the second substrates.

Claim 19 (original): The optical communication device according to Claim 18, wherein the first substrate and the second substrate have V-grooves dug along center lines in longitudinal directions, the fiber is partially held by a ferrule and the ferrule is supported by the V-groove on the second substrate and the fiber is supported by the V-groove on the first substrate.

Claim 20 (previously presented): The optical communication device as claimed in claim 1, wherein the light guide is an optical fiber supported in a V-groove made upon the substrate, an LD is mounted at an end of the fiber on a step of the substrate for giving transmitting light λ 1 to the fiber, a WDM filter is inserted into a slanting slit cutting the substrate and the fiber for selectively reflecting receiving light λ 2 and a PD is mounted above the WDM filter upon the substrate for sensing receiving light λ 2 travelling in the fiber.